CHILBLAINS.*

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The chilblain is a seasonal dematosis. Quite as much as winter itch or recurring summer eruption it is limited by the calendar. It comes with the earliest frosts of autumn and fades away with the first balmy days of spring. It is seasonal also in the individual, showing marked preference for the very young and the very old.

The importance of the chilblain as a dermatologic affection is usually underestimated. Most textbooks dismiss the subject with a few curt remarks. The question of etiology is ignored and treatment consequently remains empirical.

Concerning the cause of chilblains we know much and we know little. We are quite exact, for example, in saying that cold, especially moist cold, is the immediate cause and yet, when we attempt to explain the predilection for certain individuals, we fall back on some general term as "tubercular predisposition" or "diminished resistance."

Certain facts relating to cold as an exciting cause are matters of common knowledge. While it is not a question of absolute temperature the coldest winters usually produce the most chilblains. What seems to be the most efficient factor is habitual exposure to cold. Workers out of doors, particularly those whose hands frequently get wet and who often dry them only partially are the chief sufferers.

In the consideration of predisposing causes we first of all recognize an undeniable hereditary influence. We recollect the old-time notion that the chilblain is an expression of scrofula and we see a corresponding tendency to modernize this view by classifying it as a tuberculide. Certainly some subjects of chilblains have a family history of tuberculosis. There are also subjects who later become tubercular. The same can be said of those who have warts, or acne or any skin lesion. It must be noted that the so-called scrofulous subjects are usually young persons with puffy faces, thick, pale skin, sluggish circulation and extremities which are habitually cold and easily cyanosed. These subjects of poor peripheral circulation are the chosen victims of chilblains. Their blood, as shown by Wright, takes twice or thrice the normal time to coagulate.

Aside from the facts pertaining to family history and type of subject, one argument in favor of the tubercular origin of chilblains is that which points to the physical resemblance they bear such tuberculides or near-tuberculides as erythema induratum and lupus erythematosus. Indeed Dubreuilh considers erythema induratum as a subcutaneous chilblain just as erythema nodosum might be called a deep variety of erythema multiforme, and as angioneurotic edema might be thought of as a deep urticarial reaction. Again, in a series of six cases in which a tuberculin test was applied, four gave positive reactions, a result of slight significance, however, when one considers the limited number of cases and the uncertainties of the tuberculin test. With the information we now possess the theory of the tubercular origin of chilblains must be considered as not proven.

Where, then, are we to seek the fundamental condition which makes the soil suitable for this particular eruption? Even though we may note an abundance of precise etiologic circumstances there still remains something vital in the way of predisposition which eludes us. Whether it has to do with some trouble of the physiology of certain glands, as the thyroid, or with alterations of the blood vessels or nerves, or with the composition of the blood, or with the intimate chemistry of the skin itself, we have yet to learn.

Luithlen of Vienna in studying the relation between the inorganic constituents of the skin and disorders of the general inorganic metabolism has found that distinct chemical alterations in the skin may be detected under radical changes in diet or after administration of acids or decalcifying oxalates. In an editorial review of this work the *Journal of the American Medical Association* says very truly: "We need to know not only that the skin becomes sensitive under certain conditions of diet or drugging but also why this reactivity develops and of what organic changes it is the expression." It may be that chilblains belong in that considerable group of dermatoses the cause of which we now vaguely call nutritional disturbance. And it may be that we shall soon substitute for this generality precise chemical terms.

The fact that Wright has observed an increase in the time required for the coagulation of the blood of chilblain subjects and that this time may be lowered to the normal by the administration of calcium chlorid is certainly significant. It strongly suggests that disturbance in the general inorganic metabolism may be reflected upon the skin and there determine increased vulnerability. Nor would the fact that chilblains occur particularly in the very young and the very old militate against such an hypothesis since in those epochs of life the skin is notably deficient in resistance, besides which chilblains are only relatively infrequent in adults.

In the ordinary form the evolution is rapid. A light red spot, perhaps no larger than a dime, appears. It quickly becomes elevated and infiltrated. The lesions may be single or multiple. There are certain sites of predilection. In the order of frequency these are the favored regions: fingers, toes, especially the dorsal surfaces, heels, ears, nose and cheeks. Exposed and ill defended parts are most often attacked.

Generally an individual who has chilblains in one spot has them in the same place year after year. This is not unlike the phenomenon in eczema

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where one attack seems to predispose the particular site to subsequent eruptions either of the same or of another kind.

Subjectively there is intense itching and burning, especially upon going from a cold atmosphere into a warm room or near a stove, fireplace or any warming apparatus. Extreme cold causes a dull pain while heat is conducive to itching.

Certain forms may be designated as special because of regional or lesional peculiarities. Examples of the former are chilblains involving the prepuce or the popliteal space while variations from the normal in type are pea sized lesions which usually occur on the backs of the fingers and which have a striking resemblance to papulo-necrotic tuberculides and erythema multiforme, or large, infiltrated, sometimes ulcerated lesions covering the entire dorsal surfaces of the hands. The latter is the type seen most often in dispensary practice, occurring among cooks, dishwashers, stable men and those who are generally under-nourished and over-exposed. In some cases ulcerations occur which are healed with difficulty.

Senile chilblains have certain special characteristics. They occur most often on the hands or ears and are more diffuse as well as more swollen than the ordinary forms. They last until the advent of warm weather and leave marked atrophic spots. While not prone to ulcerate they often present superficial but painful little abscesses.

As a special form, or rather as a sequel, sometimes appear small angiomata or angio-keratomata, minute, superficial capillary dilatations with or without hyperkeratosis. In the flat form only small red spots the size of a pin-head are seen which on close examination show themselves to be made up of a collection of minute red points which partially disappear on pressure. In the typical angiokeratoma this little angioma is surmounted by an elevated, verrucous hyperkeratosis. They develop insidiously and slowly, following in the wake of chilblains and may persist to old age.

Two successive cases in my own practice showed the development of chilblains in syphilitic subjects. One occurred in diffuse form on the dorsal surface of the hands of an old man under treatment for gummata of the legs. The other was more interesting as it at first quite obscured the underlying condition. This was the case of a man 27 years of age who complained of diffuse lesions on dorsal surfaces of both hands extending well down toward the ends of the fingers. Its onset corresponded to a cold, damp spell of weather. Itching was pronounced and was aggravated by heat. Under treatment with 15% ichthyol paste the lesions gradually faded out until faint serpiginous outlines were all that remained. The subjective symptoms had quite disappeared. The configuration of the lesions was so suggestive that questions were asked which readily elicited a specific history of some eight years duration. The complete disappearance of the lesions followed the exhibition of mixed treatment.

Diagnosis: The patient usually comes with a ready-made diagnosis. The exceptional cases, however, are not always easy and may be prolific of much chagrin if not carefully considered. Several serious conditions may be confounded with chilblain. Raynaud's disease in certain slow and prolonged forms may be mistaken for senile chilblains. Its progress, however, is more intermittent and it is usually more painful although it may be of anesthetic type.

Lupus erythematosus, especially when attacking the fingers, offers some points of resemblance to chilblains. It persists through the summer, however, and is lacking in the intense subjective sensations of itching and burning. Lupus erythematosus, moreover, shows considerable scaliness and atrophic scarring not observed in chilblains.

Treatment: The treatment of chilblains suggests the oft repeated statement of Ambrose Paré: "I dressed the wound and God healed it." A French writer says: "Chilblains cure themselves but take their time."

Two remedial measures which are of great efficacy are often impracticable. They are rest in bed and change of climate. It is surprising how severe lesions are transformed by a few days' sojourn in a hospital. Rest in bed acts not only by virtue of the constant warmth which it affords but probably also by regulating the peripheral circulation.

Among general measures cod liver oil is valuable not for its immediate effect but to combat the predisposition. Indeed the liberal ingestion of fats and an ample diet in general seem obviously indicated in most cases not so much with the lesion as the patient in mind. Many specifics are vaunted, quinine by Brocq, nitroglycerin by Crocker, arsenic by many, calcium chlorid by Wright, etc. Quinine acts well in both lupus erythematosus and chilblains, a fact which leads Brocq to wonder if it will serve as an argument for classifying these two diseases, or at least some of their forms, more closely.

The first requirements in the line of local treatment are warm, properly fitting gloves and shoes and proper conditions of work. Protection must be sought against moisture as well as cold and close proximity to stoves, radiators, etc. must be avoided.

It is worthy of comment that most lists of remedies fail to specify the clinical aspect for which the particular substance is to be used. This is really the vital part of the subject. To say that certain medicaments are good for chilblains is to be both incomplete and confusing. With this thought in mind the following scheme is outlined: For simple erythematous lesions with itching and burning a calamine and zinc lotion containing 1½% phenol; for deep, infiltrated lesions ichthyol paste in from 10% to 20% paste; for ulcerations 10% solution of silver nitrate or pure balsam of peru. As a prophylactic applications of tincture of iodine or frictions with spirits of camphor followed by the application of an indifferent dusting powder as talcum or lycopodium.

From this list one should have no difficulty in selecting a suitable local application for an average case.